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A New Phyllophorid Genus in the Holothuroidea

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Abstract

A new genus is erected to accommodate a New Zealand Dendrochirote holothurian, originally described as *Pseudocucumis bicolumnatus* (Dendy and Hindle).

Family PHYLLOPHORIDAE

Sub-family THYONIDIINAE Heding and Panning, 1954.

Neocucumella n.g.

DIAGNOSIS: Tentacles 20 (outer ring with 5 pairs of larger tentacles, interradial; inner ring with 5 pairs of small tentacles, radial). Tubefeet confined to the radii, arranged in double rows. Radial pieces of the calcareous ring each with a deep median anterior notch. Interradials rounded anteriorly. Calcareous deposits numerous two-pillared tables, with symmetrical circular or elliptical bases, 0.05 mm in average length, perforated by 4 large and 4 small (alternating) holes.

TYPE SPECIES: *Pseudocucumis bicolumnatus* Dendy and Hindle.

DISCUSSION

Dendy and Hindle (1907) founded a new species *Pseudocucumis bicolumnatus* from off Dunedin, New Zealand, the description being based on a single specimen. Later, Joshua and Creed (1915) noted the presence of a specimen of apparently the same species in the South Australian Museum. Mortensen (1925) rediscovered Hutton's (1878) *Pseudocucumis thomsoni,* and noted that both the species *thomsoni* and *bicolumnatus* were similar in some respects, but pointed out a number of important differences between them, although he had no specimens of *P. bicolumnatus* on hand at the time.

Engel (1933) suspected that *P. thomsoni* and *P. bicolumnatus* were synonymous (together with *P. watasei* and *P. japonicus*), or that they were at least very closely related to each other. Deichmann (1944) reduced *Pseudocucumis* to complete synonymy with *Urodemas* Selenka, and re-established Bell's (1884) genus Amphicyclus to accommodate *P. thomsoni* (within which was included *P. bicolumnatus*) and two other species.

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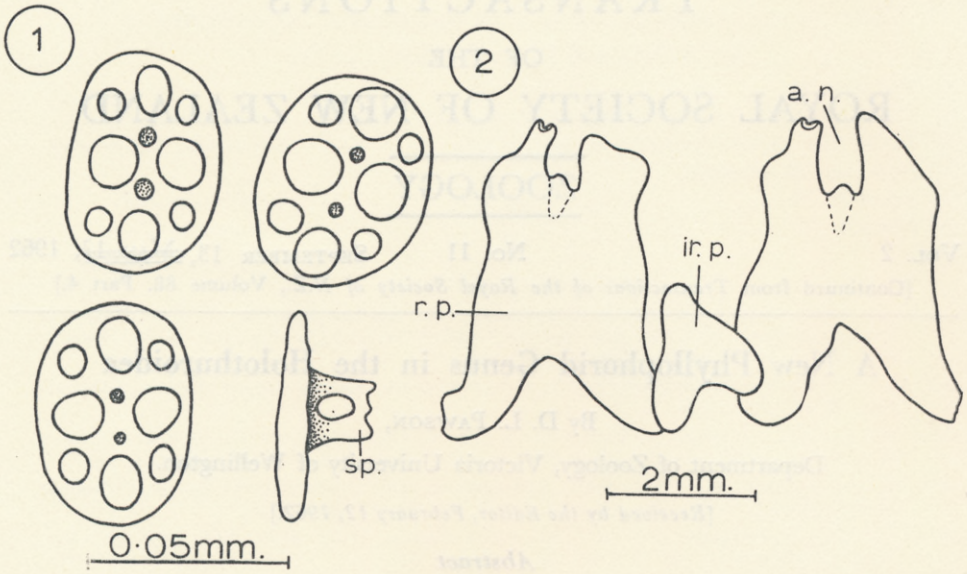

Figs. 1-2. *Neocucumella bicolumnata* (Dendy and Hindle). 1. Two-pillared tables from the skin. 2. A Portion of the Calcareous Ring. a.n., Anterior notch; ir.p., interradial piece: r.p., radial piece; sp., two-pillared spire.

Clark (1946) did not agree entirely with Deichmann's reasoning, and considered genus *Pseudocucumis* to be monotypic, containing only the species *aciculus* Semper. He proposed a new genus *Mensamaria* (type species *Pseudocucumis intercedens* Lampert), and included within *Mensamaria* the species *bicolumnatus* and *thomsoni*. In their revision of the Phyllophoridae, Heding and Panning (1954) synonymised *thomsoni* and *bicolumnatus*, placing them in genus *Amphicyclus* Bell.

However, the type of *Amphicyclus*, species *japonicus* Bell, has 25 tentacles, as also does species *thomsoni*, but the species *bicolumnatus* has 20 tentacles, and it appears then that while species *thomsoni* belongs in genus *Amphicyclus*, species *bicolumnatus* does not, and falls rather nearer to *Neocucumis* Deichmann.

The species *bicolumnatus* appears to be unique in possessing tables of a regular shape and size, with the constant number of eight perforations, four larger holes alternating with four smaller ones (Pl. I, fig. 1). The type of *Neocucumis*, *N. marioni* (V. Marenzeller), and the other species included in this genus by Heding and Panning (1954), have tables which vary somewhat in shape and size, and the number of perforations per table is anything but constant.

In all of the *Neocucumis* species (Heding and Panning, 1954), the interradial pieces of the calcareous ring have more or less sharp anterior points, while those in *bicolumnatus* are quite distinctly blunt and rounded (Pl. I, fig. 2). The radials in *bicolumnatus* have a deep median anterior notch, whereas the radials in *N. marioni* have, by contrast, a median anterior projection.

In the light of this evidence then, it seems necessary to propose a new genus for the New Zealand species.

KEY TO THE GENERA IN GROUP D OF SUB-FAMILY THYONIDIINAE

(see Heding and Panning (1954), p. 75)

1 (4)	Tentacles 20.	
2 (3)	Tables invariably with 8 perforations, 4 large and 4 small	*Neocucumella*, n.g.
3 (2)	Tables with variable numbers of perforations	*Neocucumis* Deichmann
4 (1)	More than 20 tentacles.	
5 (6)	Tentacles 25	*Amphicyclus* Bell.
6 (5)	Tentacles 30	*Mensamaria* Clark.

LITERATURE CITED

BELL, F. J., 1884. Studies in the Holothurioidea III. On *Amphicyclus*, a New Genus of Dendrochirotous Holothurians, and its Bearing on the Classification of the Family. *Proc. Zool. Soc. London*. 1884. pp. 253-258.

CLARK, H. L., 1946. The Echinoderm Fauna of Australia, its Composition and Origin. *Carnegie Inst. Wash.* Publ. 566.

DEICHMANN, E., 1944. *Urodemas bifurcatum*, a New Holothurian from South Africa, with a Revision of the Genus *Urodemas* Selenka. *Ann. Mag. Nat. Hist.* Ser. II (II), pp.

DENDY, A. and HINDLE, E., 1907. Some Additions to our Knowledge of the New Zealand Holothurians. *J. Linn. Soc. (Zool.)*, XXX, pp. 95-125, pls. 11-14.

ENGEL, H., 1933. Holothuries. Res. Sci. voy. Indes Orient. Neerl. *Mem. Mus. roy. hist. nat. Belgique*, hors ser., vol. 3 (13) pp. 1-42, pl. 1.

HEDING, S. G. and PANNING, A., 1954. Phyllophoridae. Eine Bearbeitung der Polytentaculen Holothurian des Zoologischen Museums in Kopenhagen. *Spolia Zool. Mus. Hauniensis* XIII, pp. 1-209.

HUTTON, F. W., 1878. Notes on Some New Zealand Echinodermata, with Descriptions of New Species. *Trans. Proc. N.Z. Inst.* XI, pp. 305-308.

JOSHUA, E. C. and CREED, E., 1915. South Australian Holothuroidea, with Descriptions of New Species. *Trans. Roy. Soc. S. Aust.* 39, pp. 16-24. pls. 2-4.

MORTENSEN, Th., 1925. Echinoderms of New Zealand and the Auckland-Campbell Islands. Part IV. Holothuroidea. *Vidensk. Medd. dansk naturh. Foren. Kbh.* 79, pp. 322-386.

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